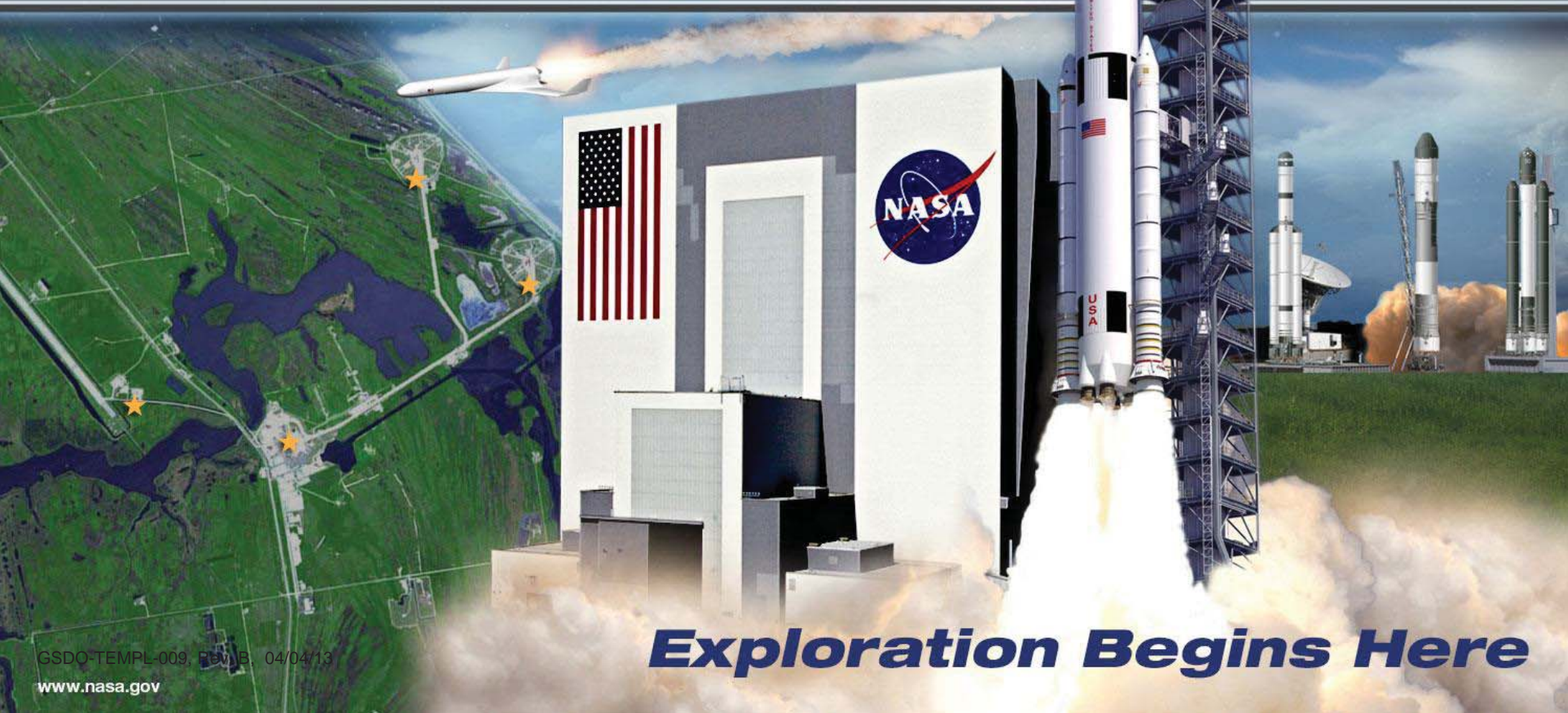


National Aeronautics and Space Administration



# Pathway Intern Showcase

Claudia Eyzaguirre  
LX-D1



***Exploration Begins Here***

GSDO-TEMPL-009, REV. B, 04/04/13

[www.nasa.gov](http://www.nasa.gov)

- ◆ **Florida International University**

- Miami, FL
- B.S. Mechanical Engineering
- Graduation Date: December 2014

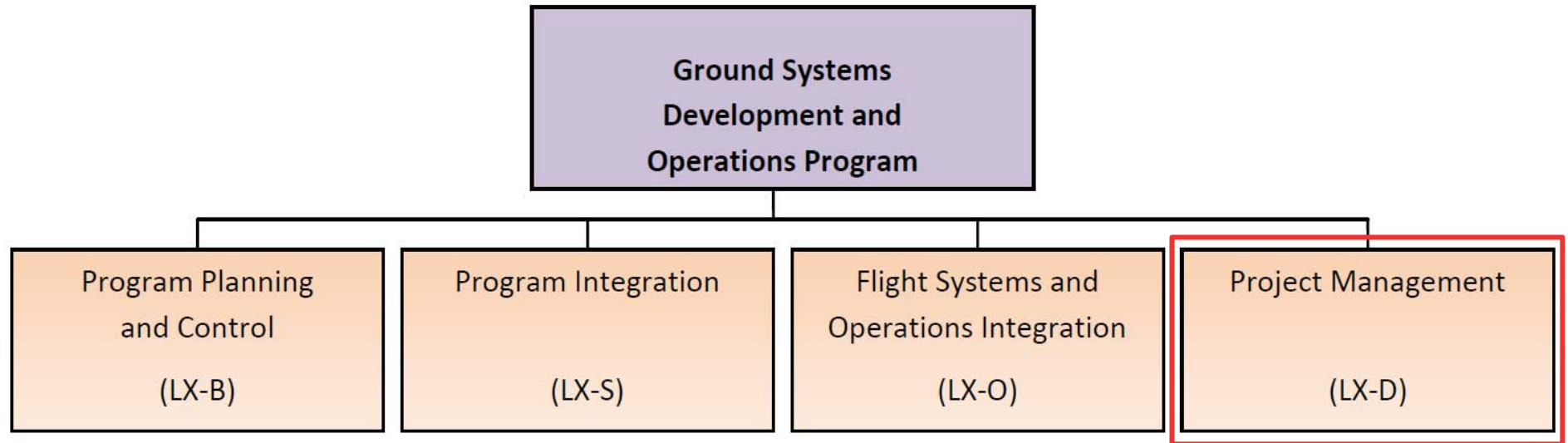


- ◆ **Ground Systems Development and Operations Program, Project Management Division (LX-D1)**

- Supervisor: Mike Stelzer
- Mentor: Regina Spellman
- Pathway intern: Summer & Fall 2014
  - Engineering Student Trainee
- SAIC intern: Summer 2013
  - Project Management Intern



# Organizational Structure



## Business Objectives and Agreement

The Project Management Division provides leadership, guidance, and technical expertise to GSDO EITs in the areas of project cost, schedule, and technical scope management. The office plans, coordinates, and integrates the development of Construction of Facilities projects, Ground Support Equipment projects, and Ground Support Systems projects within an Element. In addition, the office is responsible for the overall project management and technical integration of project scope within and across the Elements to include the development and maintenance of project requirements, the execution of trade studies and technical assessments, and the management/oversight during project implementation and verification phases for development and modernization projects.



## ◆ NASA

- Expand the frontiers of knowledge, capability, and opportunity in space .
- Advance understanding of Earth and develop technologies to improve the quality of life on our home planet .
- Serve the American public and accomplish our Mission by effectively managing our people, technical capabilities, and infrastructure .

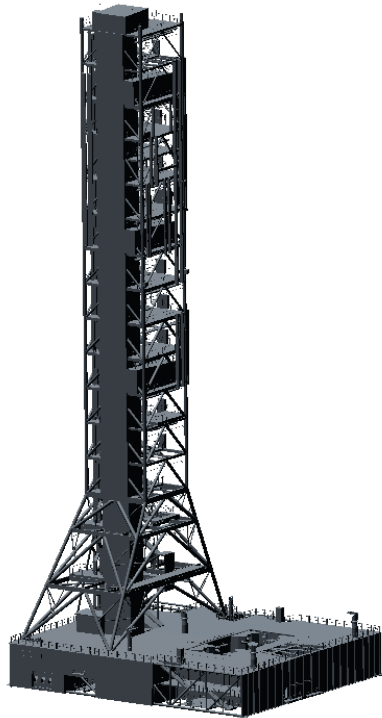


# Mobile Launcher Assignments

- ◆ Provided extensive integration support to the ML Lead Element Technical Integrator through multiple ML Systems Engineering products
  - Detailed Verification Objectives (DVOs)
    - Assisted by writing Detailed Verification Objectives (DVOs) to be used to demonstrate ML requirements have been met
    - Collaborated with other element ETIs to ensure consistency in the way requirements are being verified
  - Interface Matrix
    - Compared all ML's subsystem block diagrams to verify interfaces were identified mutually between subsystems
    - Created spreadsheet identifying existing and missing interfaces on ML subsystems
  - Block Diagram booklet
    - Created a compilation of all ML subsystems block diagrams to be used as reference for the ETIs and the ML team



# ML GROUND SUPPORT EQUIPMENT (GSE) INSTALLATION

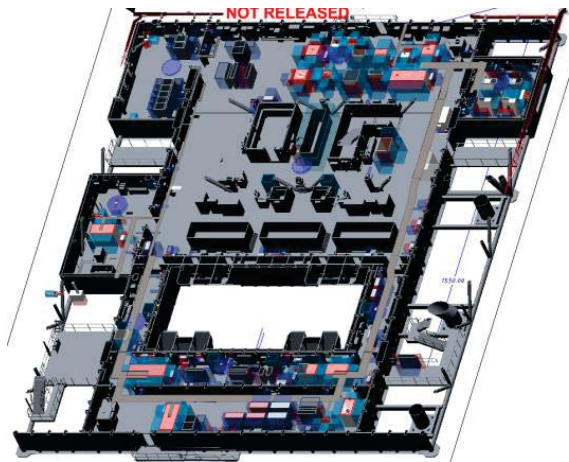
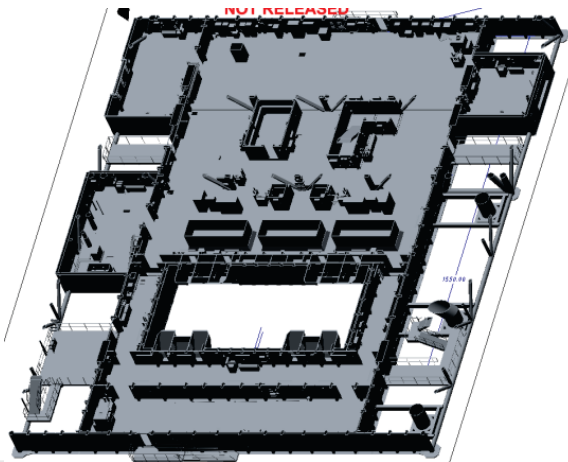


GSE  
Install



## Subsystems Installation:

- Cryogenics
- Hypergols
- Hydraulic Servicing
- Environmental Control System
- Ground Cooling System
- Pneumatics
- EGSE Equipment
- Communications Equipment
- Umbilical and Access Arm Installation (Hinge and Latch)
- Conduit, Cable trays, and cable schedules



- ◆ **Provided ongoing integration support the ML GSE Installation Design leadership team related to both Systems Engineering and Project Management tasks**

- **Design Technical Specifications**

- Performed a thorough comparison of both the ESC and RS&H ML GSE Installation design specifications.
- Identified differences that could result in costly conflicts during contract execution
- Overlaps and mismatches were identified and comments were submitted to be studied at the design review
- Obtained knowledge on description and content of specs and learned the importance the technical specifications have on a contract

- **GSE Installation 90% Design Package**

- Collaborated with the ML electrical lead to review the cable schedules, cable tray design, and GSE locations to validate routing between equipment

- **Install Implementation Plan**

- Supported the ML team in developing an installation implementation plan based on GSE priorities, MLB room accessibility, and delivery dates

## ◆ ML COMM. install responsibilities diagrams

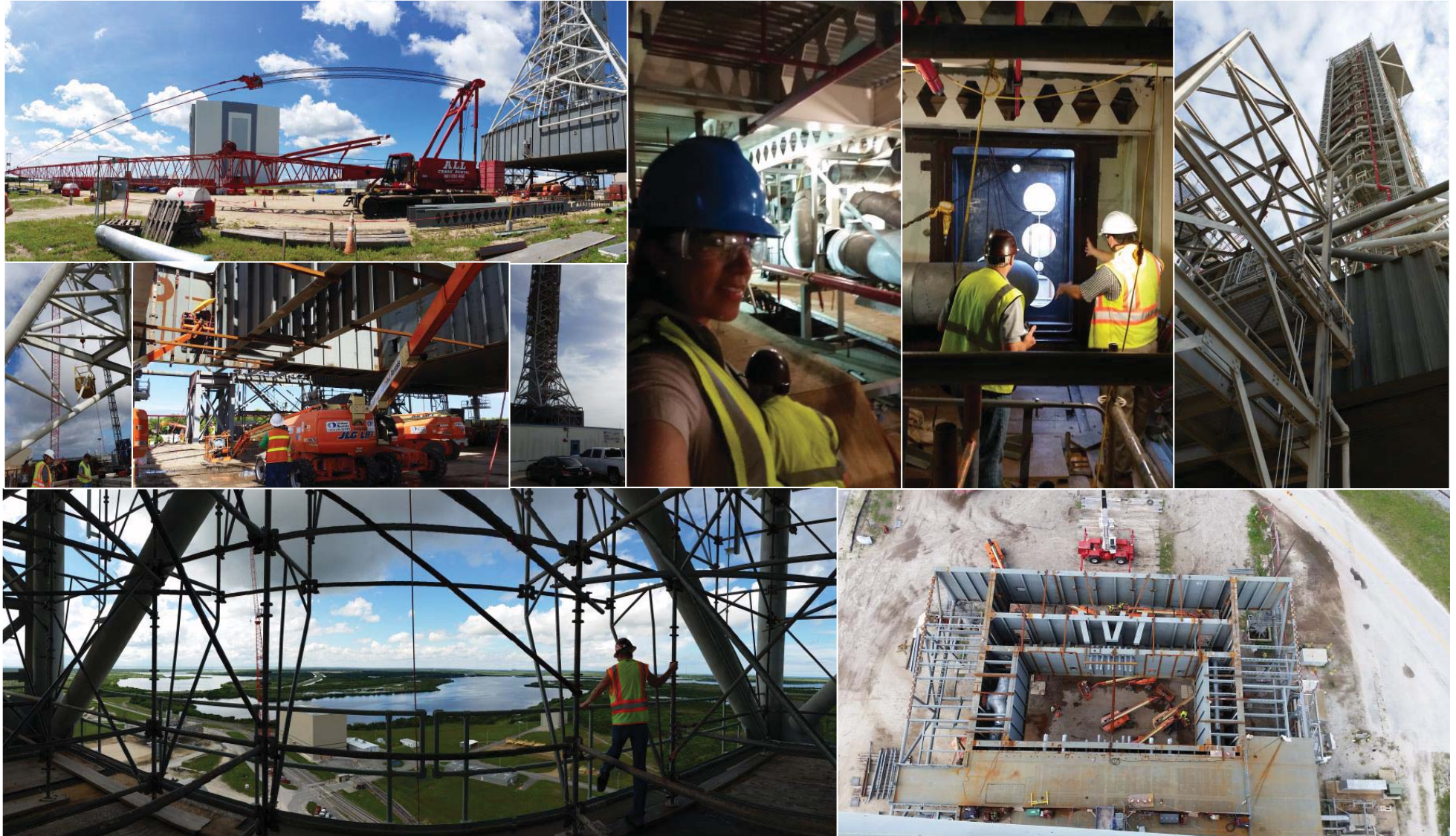
- Develop a tool that could more clearly represent install responsibilities between the fixed price contractor and IMCS for the SLS ML GSE Install
- Researched various possibilities of software tools and determined the best fit for this project
- Collaborated along with Comm. lead to obtain a description of the responsibilities
- Learned to use the software and Java code to create an interactive tour
- Initiated the procurement of this tool for future use by the ML Installation team



FPC Install	IMCS Install	IMCS/FPC Install	GFE
<p>1. Download the FPC software from the <a href="#">FPC Software Download</a> page.</p> <p>2. Run the FPC installer.</p> <p>3. Follow the prompts to install the FPC software.</p> <p>4. The FPC software is installed successfully.</p>	<p>1. Download the IMCS software from the <a href="#">IMCS Software Download</a> page.</p> <p>2. Run the IMCS installer.</p> <p>3. Follow the prompts to install the IMCS software.</p> <p>4. The IMCS software is installed successfully.</p>	<p>1. Download the IMCS/FPC software from the <a href="#">IMCS/FPC Software Download</a> page.</p> <p>2. Run the IMCS/FPC installer.</p> <p>3. Follow the prompts to install the IMCS/FPC software.</p> <p>4. The IMCS/FPC software is installed successfully.</p>	<p>1. Download the GFE software from the <a href="#">GFE Software Download</a> page.</p> <p>2. Run the GFE installer.</p> <p>3. Follow the prompts to install the GFE software.</p> <p>4. The GFE software is installed successfully.</p>

ML	Tower-Electrical Room	Tower	Tower (Coax)	ML Levels
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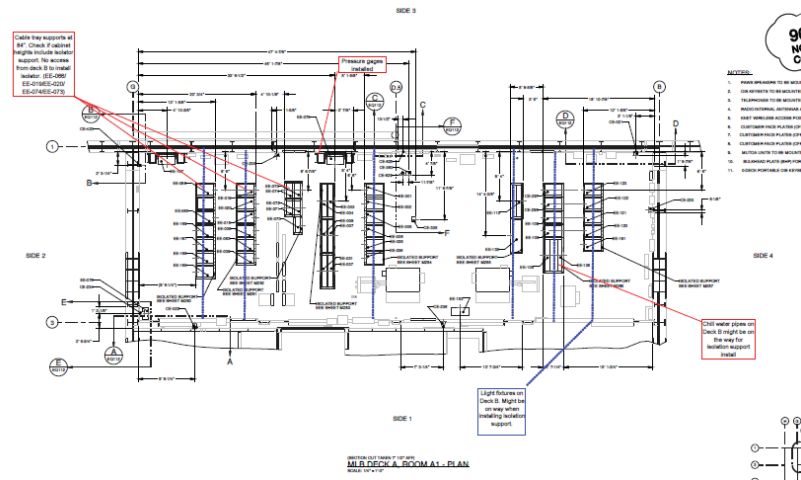
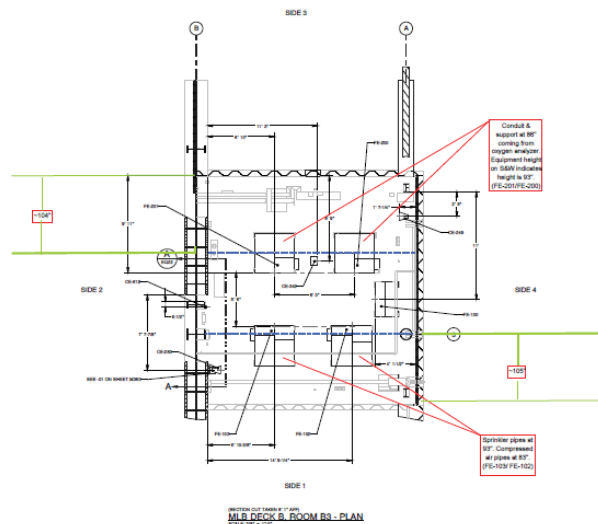






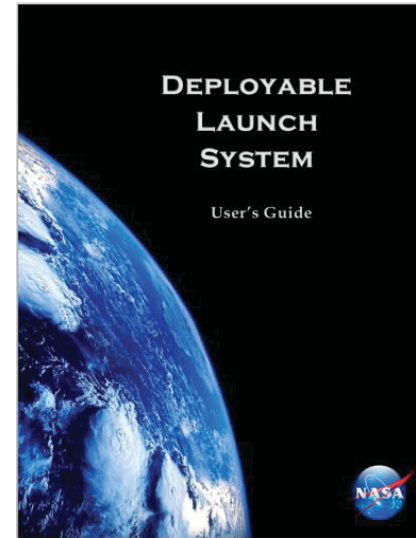
## ◆ ML base walk down

- Compared drawings of ground support equipment (GSE) locations and dimensions to current MLB to identify possible interference with pipes, conduit, or supports that might not appear on model.
- Identified interference with GSE and submitted comments to the package design review.



## ◆ User Guide for DLS

- Worked independently to develop a user guide to be distributed to prospective customers to inform them about the DLS including vehicle interfaces, system description, load capacities, etc.
- Worked with the lead engineers to acquire the subsystem descriptions and specifications that are contained in the user guide







- ◆ Thank you to all my wonderful coworkers in the ML team, I could not have asked for a better group to work with!
- ◆ Working at KSC has been a life changing experience and I hope to be able to continue supporting NASA's mission.

